

Handling Instruction for KSS Actuators

This product is designed and manufactured for general industrial machines.

Please read by all means to have you use this product definitely safely.

The Instructions are divided into 3 parts, which are "danger" "warning" "caution" by degree of risk and malfunction.



Danger

Wrong handling will lead to the risk of death or serious injury immediately.



Warning

Wrong handling will lead to the possibility of death or serious injury.



Caution

Wrong handling will lead to the possibility of injury or damage of the products.



Dangerous items

- 1) This product is NOT designed or planned to guarantee the use of highly safety required machine or human life related apparatus, such as medical equipment, important safety parts, and so on. Therefore we do NOT guarantee human life.
Please note that the range of guarantee is only our product itself. In case of any breach of the statement above, KSS expressly disclaims all responsibilities for any monetary damage, lost profit, any claims from the third party.
- 2) If this product is used in vertical direction, product may fall down automatically because of its weight when powered off.
Please be careful with its falling down. If you want to prevent from falling down of this product when powered off, solenoid brake unit can be provided except some type of Actuators. Please ask KSS representative.



Warning items

- 1) Please do NOT use this product other than under the power supply voltage displayed on the equipment.
It may cause fire or malfunction
- 2) Please do NOT touch electronic components with a wet hand. It may cause the electric shock.
- 3) Please do NOT bend, twist, pull the lead wire forcibly, and please do NOT put a heavy thing on it.
It may cause an electric shock, or the fire.
- 4) Please do NOT touch the main body during operation or after switching off for a while. It may cause the injury or burn.
- 5) When you put on or take off a connection terminal, please switch off and disconnect the plug.
It may cause an electric shock or the fire.
- 6) Please do NOT put inflammables or something, which disturbs ventilation, around a product. It may cause the device damage.
- 7) Please switch it off when the blackout. It may cause an injury or the device damage because of sudden Motor rotating, at the time of the power restores.
- 8) Please do NOT touch the connection terminal for five minutes after switching off. It may cause an electric shock by the residual voltage.



Caution items

Precaution for operating

- 1) Before using these products, please read instruction manuals and follow the precautions below.
- 2) Please do NOT hit or drop this product, do NOT apply Axial or Radial load exceeding specifications, it may cause malfunction.
- 3) Before using, please check that the product has no defect, and product is the same as your order.
- 4) Please do NOT disassemble each component, dust may get inside the product. It may deteriorate accuracy.
- 5) Please prevent contamination from dust or swarf. Dust or swarf may cause damage to Ball Screw/Lead Screw, which lead to deteriorating the function.
- 6) Actuators should be checked the lubricant condition every 2 to 3 months. If Grease is contaminated, remove old Grease and replace with new one. Grease should be the same as the original Grease, which is described in catalogue or drawing.
- 7) Please do NOT use Actuators exceeding our specifications in Load and Speed.
- 8) Please do NOT use Actuators under our recommended Acceleration & Deceleration Rate in our catalogue.
- 9) Please do NOT hold the Motor leads and Sensor leads, this may result in damage to the device or injury.
The Motor & Sensor lead wire should be fixed securely.
- 10) Keep away from Magnetic memory device.

Precaution for safety

- 1) If abnormal odor, noise, smoke overheating, or vibration occurs, stop operation immediately and turn the power off.
- 2) Please do NOT use exceeding rated current.
- 3) The Motor may overheat depending on the load conditions or driver used.
Make sure that the Motor surface temperature does not exceed 80°C when in use.
- 4) Please do NOT bend, pull or pinch the Motor & Sensor lead wire.
- 5) Please do NOT touch moving parts during operation.
- 6) Please switch off the Driver, when inspection or maintenance.

Operating environment

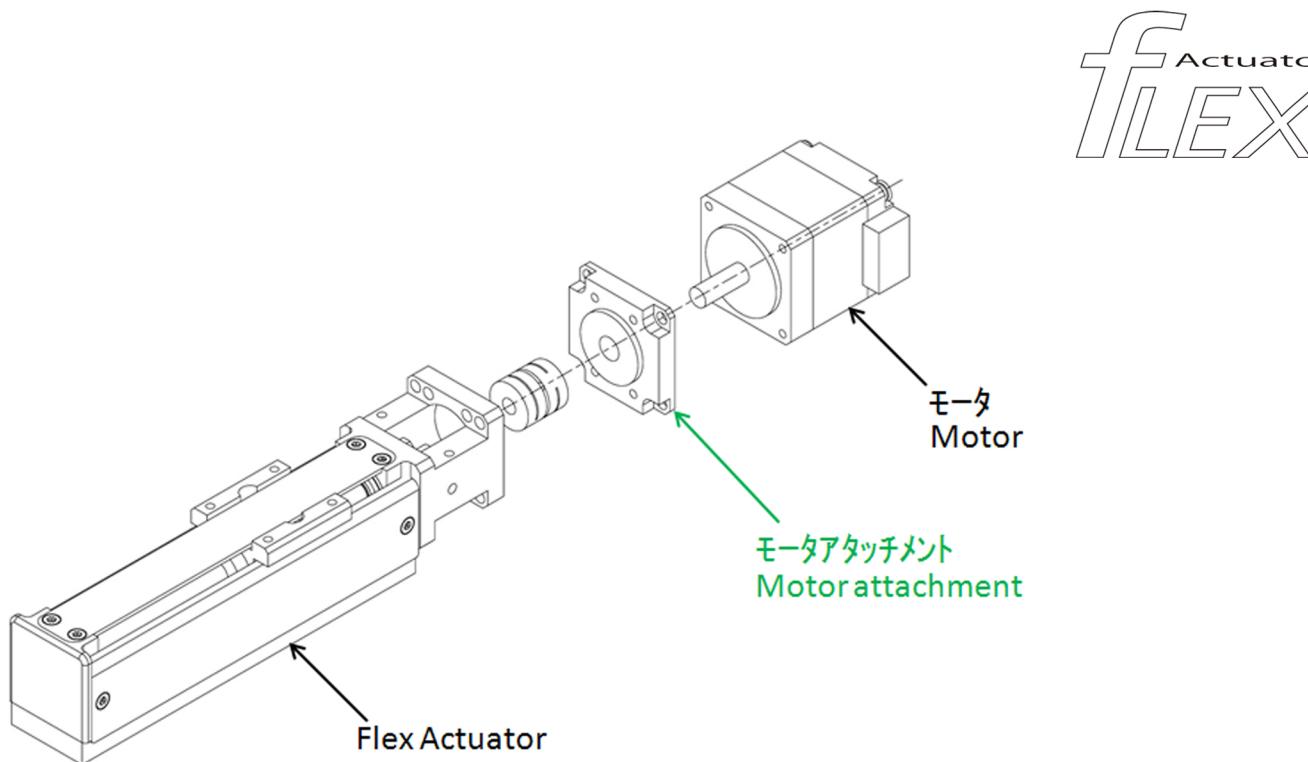
- 1) Operating environment should be 0 ~ 40°C in temperature and 20 ~ 80%RH in humidity.
Please do NOT use these products under dew condensation, corrosive gas or inflammable gas environment.
- 2) Please do NOT use this product under strong electric field, strong magnetic field.
- 3) Please prevent from swarf, oil mist, cutting fluid, water/moisture, salt spray, organic solvent and other contamination.
- 4) Actuators cannot be used under the vibration, impact, vacuum, and other special environment.

Trouble shooting

No.	Phenomenon	Checking item	Action
1	A table or a Rod position moves off without any operation. (without exciting)	Does a Driver operate normally? Are Motor or Sensor lead wires connected surely?	When Actuator is not under operation, please confirm whether POWER LED turns on after checking the connection between Driver and DC power supply. Please confirm the connection of Motor & Sensor lead wires. If lead wire is extended, please confirm a connection part.
2	An Actuator does not work. (Zero return is not possible)	Take the same check as No.1. Do the specifications of the Sensor match? Does the Coupling loose? Do set screws interfere with the inside parts?	Take the same action as No.1. Confirm specifications. Tighten the Coupling surely. Reconfirm the length of set screws.
3	A table or Rod moves reverse direction of CW or CCW.	Take the same check & action as No.1.	Please confirm whether CW pulse and the CCW pulse on Driver are connected adversely.
4	Operation is unstable. Step-out occurs frequently	Is the operating speed so fast or so slow? Is the acceleration & deceleration rate too small? Is the load too big?	Change the operating speed of the controller in an appropriate value, and confirm movement. Turn up the acceleration & deceleration rate, and check the movement. Reduce the load and check the movement.
5	Vibration is too high.	Is the operating speed too fast? Are Motor or Sensor lead wires connected surely? Is an Actuator mounted on a flat base surely?	Please change the operating speed or step angle, because of the possibility of resonance between Motor and Load. Please confirm the connection of Motor & Sensor lead wires. Put the Actuator on flat base and mount it surely.
6	Heat generates abnormally on Motor. (Generally heat generation occurs from Motor)	Is the operating time too long? Is the operating temperature too high? Is the current down function effective? Is the driving current set point of the driver higher than the driving current of the Motor ?	Please make the operating time short or halt time long. Please re-consider or change operating environment. Set the current down function. Please match the driving current value of the Motor with the driving current set point of the Driver.
7	Strange noise occurs..	Are Motor or Sensor lead wires connected surely? Is there any moment load on Actuator?	Please confirm the connection of Motor & Sensor lead wires. It causes early wear, please correct it immediately.
8	An Actuator does not work according to the specifications.	Does the driving current value of the Motor match the driving current set point of the Driver? Are Motor or Sensor lead wires connected surely? Are you going to operate Actuator exceeding specifications in catalogue?	Please match the driving current value of the Motor with the driving current set point of the Driver. Please confirm the connection of Motor & Sensor lead wires. Please confirm the specifications in catalogue again.
9	Grease on screw or guide discolors.	Do you grease up periodically? Is Actuator used in an inferior environment, such as iron powder or dust?	Please stop immediately, and grease up. Please re-consider environment.

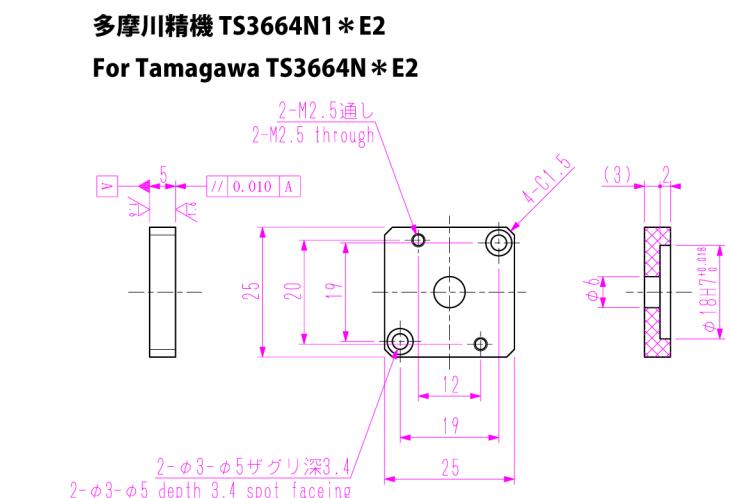
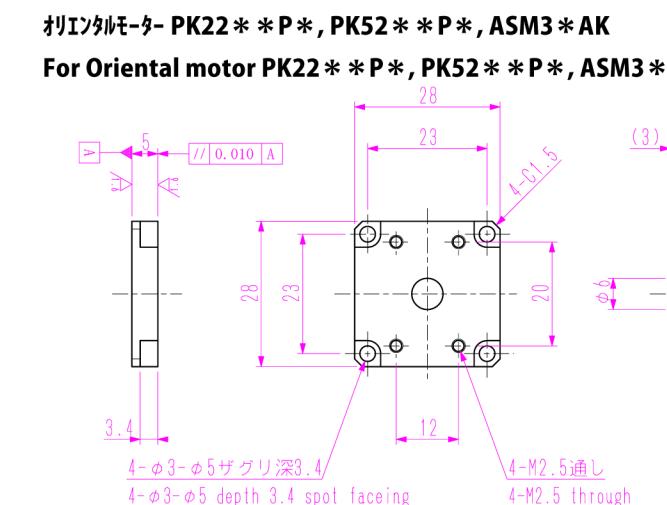
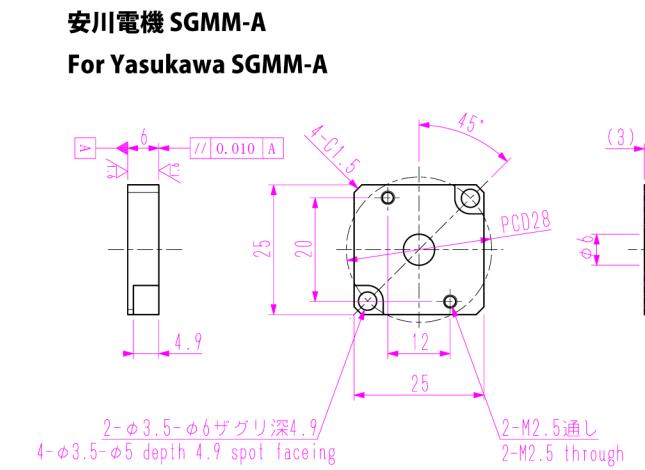
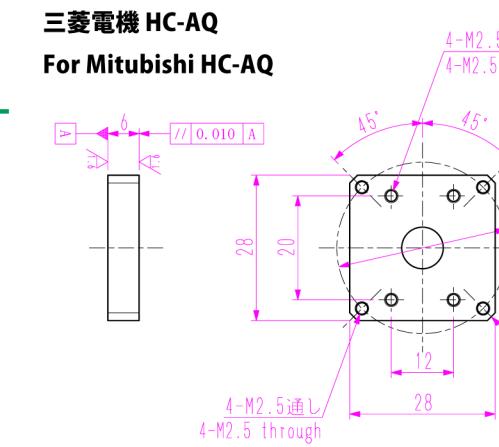
*Any trouble other than the above or in case of no improvement with action above, please contact KSS.

モータアタッチメント Motor Attachment

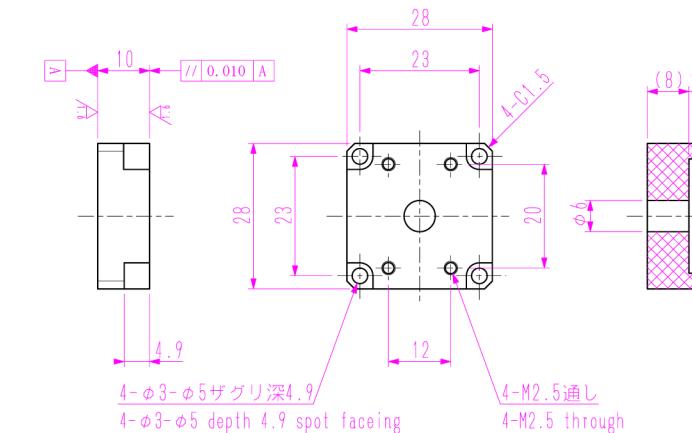


- ・モータメーカー各社のモータ取付寸法、出力シャフト長の違いを気にする事なく
Flex Actuatorにジャストフィットする専用設計となっております。
- ・Specially designed for the Flex Actuator to fit without the regard of the
motor installation pitch and differences of the length of the output shaft.

メーカー company	モータ種類 Motor Type	モータ角 Size	適用モータ型式 Acceptable motor	図番 Drawing Number
三菱電機/Mitsubishi	ACサーボモータ AC Servo	□28	HC-AQ	KH-00074-00
		□25	SGMM-A	KH-00075-00
オリエンタルモーター Oriental Motor	2相ステッピングモータ 2 Phase step motor	□28	PK22**P*	KH-00054-01
	5相ステッピングモータ 5 Phase step motor	□28	PK52**P*	
	αステップモータ α step motor	□28	ASM3*AK	
多摩川精機/Tamagawa	5相ステッピングモータ 5 Phase step motor	□24	TS3664N1*E2	KH-00073-00
	2相ステッピングモータ 2 Phase step motor	□28	TS3641N1*E2	KH-00068-00
三明/Sanmei	Si-servo	□28	TS3641N61S04	



多摩川精機 TS3641N * E2, 三明 TS3641N61S04
For Tamagawa TS3641N * E2, Sanmei TS3641N61S04



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LEX

モーター取付説明書(FAシリーズ)

Motor Assembling Instruction (FA Series)

